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Question Paper Code: R8763

B.E./B.Tech. DEGREE EXAMINATION, NOV 2025

One Credit Course

Mechanical Engineering

R21UME863 – SOLAR ENERGY

(Regulations R2021)

Duration: 1.30 hours

Maximum: 50 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. How does human activity impact energy consumption and its sources? CO1- U
2. What are two limitations of non-renewable energy sources. CO1- U
3. What is a solar bond, and how does it promote solar energy projects? CO1- U
4. Explain the working of a solar still and its use in water purification. CO1- U
5. How is solar energy used in agricultural applications? Provide two examples. CO1- U
6. What are the economic benefits of using solar energy in agriculture? CO1- U
7. Describe the working principle of a Flat Plate Solar Collector. CO1- U
8. What are the environmental advantages of using solar power plants? CO1- U
9. Why is economic analysis important in evaluating solar energy projects? CO1- U
10. Describe the working principle of a solar ice maker. CO1- U

PART – B (2 x 15= 30 Marks)

11. (a) Compare with neat sketch any two type concentrating collectors in detail with proper explanation CO1 - U (15)
Or
(b) Compare the mirror strip collector and Fresnel collector with a neat sketch with proper explanation CO1 - U (15)
12. (a) Demonstrate with a neat diagram and working of a solar cooker with proper explanation. CO2 - U (15)
Or
(b) Illustrate with a neat diagram working of a solar water heating with proper explanation CO2 - U (15)

